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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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08/699,844 08/20/96 DETTMER

D 18799.79 (TT1

EXAMINER

26M1/1118

ROBERT J. CRAWFORD, ESQ.
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90 SOUTH SEVENTH STREET
MINNEAPOLIS MN 55402-4131

ART UNIT

SAINT SURIN, J

PAPER NUMBER

2742

DATE MAILED:

11/18/97

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
08/699,844

Applicant(s)
David R. Dettmer

Examiner
Jacques M. Saint-Surin

Group Art Unit
2601



☒ Responsive to communication(s) filed on 9/25/97, 8/1/97, 5/19/97, 5/27/97, 3/3/97

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-23 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-23 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 8

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US Patent 5,297,203) in view of Urbanski (US Patent 5,668,871).

Regarding claim 1, the near full duplex portable handset speakerphone is met in Rose et al. as digital cordless telephone apparatus 100. The microprocessor is shown in Rose et al. as microprocessor 123. The hands-free register connected to the microprocessor is met in Rose et al. as receiver register 178. The hands-free transmit register connected to the microprocessor is met in Rose et al. as transmitter register 143. The ROM having a speakerphone operation algorithm is met in Rose et al. as microprocessor 183 that comprises "a microcomputer on a chip" type device incorporating internal RAM and Rom storage. The first analog-to-digital converter connected to the hands-free register is met in Rose et al. as A/D converter 142. The

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second analog-to-digital converter is met in Rose et al. as A/D converter 179.

Similarly as claimed, the digital portable handset of Rose et al. does perform the full-duplex communication without a digital signal processor. However, Rose et al. do not specifically disclose a first programmable digital attenuator connected to the microprocessor and to a speaker and a second programmable digital attenuator connected to the microprocessor and to a microphone.

Urbanski discloses in Fig. 3 digital attenuators 305 and 307. It would have been obvious to one of ordinary skill of the art at the time of the invention to include in the portable handset of Rose et al. the digital attenuators of Urbanski as taught above because one of ordinary skill of the art would be able to recognize that by connecting the programmable attenuators to the microprocessor and respectively to the speaker and to the microphone, the above combination would provide attenuated transmit and attenuated receive signals effectively and efficiently.

Regarding claim 2, Rose et al. show in Fig. 1, a schematic circuit diagram of the speakerphone and hybrid which drives microphone 451 and speaker 452 which together form speakerphone 116. As with Fig. 17, Fig. 18 discloses a conventional speakerphone and hybrid readily understandable by those skilled in the art. The near

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full duplex portable handset is already discussed in the rejection of claim 1.

Furthermore, Rose et al disclose a preamplifier 124, a voice data interface 125, readable as a codec, which first unscrambles the digital voice data and then recognizes the received signal as digital voice data and then recognizes the received signal as a digital voice signal.

Regarding claim 3, it is rejected for the reasons set forth for claim 2.

Furthermore, Rose et al. disclose a portable handset unit that comprises a microphone 105 and a speaker 103 wherein the handset unit communicates with base unit 110 via radio frequency (RF) links between A and B established between antenna 102 of handset unit 101 and antenna 115 of base unit 110.

Regarding claim 4, as discussed above, it is rejected for the reasons set forth for claim 3. Furthermore, Rose et al. disclose a telephone line interface wherein analog voice signals presented to base unit 110 via either the telephone interface or speakerphone 116 are transmitted to handset unit 101 using the same process used by handset unit 101 to transmit to base unit 110 except that base unit 110 will transmit at a frequency of 906 MHZ.

Regarding claim 5, it is rejected for the reasons set forth for claim 3.

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Regarding claim 6, as discussed above, it is rejected for the reasons set forth for claim 2/3. Also, as discussed in claim 1, the digital portable handset of Rose et al. does not include a digital signal processor which conclude that the full duplex communication is achieved without digital signal processor. Moreover, Rose et al. disclose a base unit 110 that comprises a microprocessor, a telephone line interface and radio frequency interface.

Regarding claim 7, Rose et al. disclose a first speech path 133 and a second speech path 134. Digital command data is transmitted and received in the following manner. When the user pushes a button on the keypad 184, microprocessor 183 transmits a corresponding command code to microprocessor interface 187. Microprocessor interface 187 in turn transfers the command code to transmitter register 143 which together with associated circuitry assembles a command data packet into the stream of voice data. See: col. 24, lines 15-24. In addition, Fig. 19 show a circuit diagram for digital volume control 454 for digitally adjusting the microphone and speaker gains in relation to the peak volume levels.

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Regarding claims 8 and 9, Rose et al show in Fig. 10 microprocessor 183 together with command data-voice data interface 125 and watchdog timer shown implemented on an application specific integrated circuit 195.

Regarding claim 10, Rose et al. disclose a first speech path 133, a second speech path 134, an A/D converter 142, a microprocessor 123, a memory device ROM.

Regarding claim 11, Urbanski discloses attenuator 305 which comprises an operational amplifier 317.

Regarding claim 12, Rose et al. disclose a receive register 178.

Regarding claim 13, Rose et al. disclose a transmit register 143.

Regarding claim 14, it is rejected for the reasons set forth for claim 10.

Regarding claim 15, Rose et al. disclose an A/D converter 179.

Regarding claim 16, Rose et al. disclose a receive register 178.

Regarding claim 17, Rose et al. disclose a transmit register 143.

Regarding claims 18 and 19, Rose et al. disclose data path 133 which corresponds to the transmitter portion of handset 101 whereby the spoken word is received and transmitted via antenna 152 while data path 134 corresponds to the

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receiver portion of handset 101 wherein the radio frequency signal is received antenna 152 and made audible at speaker 182. In operation, microphone 140 of handset 101 picks up the user's spoken voice and converts it into an analog electric signal. This signal is then amplified and filtered by transmitter baseband audio stage 141 the output of which is a baseband analog audio signal. This baseband analog signal then passes to analog-to-digital converter 142 which serves to digitize the incoming analog signal such that the output of analog-to-digital converter 142 is a baseband digital audio signal. See: col. 22, lines 19-64.

Regarding claim 20, it is rejected for the reasons set forth for claim 14. Furthermore, Rose et al. disclose a first speech path 133 and a second speech path 134. Digital command data is transmitted and received in the following manner. When the user pushes a button on the keypad 184, microprocessor 183 transmits a corresponding command code to microprocessor interface 187. Microprocessor interface 187 in turn transfers the command code to transmitter register 143 which together with associated circuitry assembles a command data packet into the stream of voice data. See: col. 24, lines 15-24. In addition, Fig. 19 show a circuit diagram

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for digital volume control 454 for digitally adjusting the microphone and speaker gains in relation to the peak volume levels.

Regarding claim 21, the microprocessor 183 of Rose et al. performing the steps of monitoring include an audio register to store the peak level of the audio signal.

Regarding claim 22, Rose et al. disclose microprocessor 183 that uses control algorithm for performing the steps of monitoring, comparing and adjusting.

Regarding claim 23, Rose et al. show in Fig. 19 a circuit diagram for digital volume control 454 for digitally adjusting the microphone and speaker gains in relation to the peak volume levels.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haddad et al. (US Patent 4,715,063) disclose a speakerphone for radio and landline telephones.

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Nyhart et al. (US Patent 5,553,137) disclose a method and apparatus for echo canceling in a communication system .

Puhl et al. (US Patent 4,629,829) disclose a full duplex speakerphone for radio and landline telephones.

Potratz (US Patent 4,843,621) discloses a speakerphone using digitally compressed audio to detect acoustic feedback.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (703) 305-4760. The examiner can normally be reached on Mondays through Thursdays from 8:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista M. Zele, can be reached on (703) 305-4701. The fax phone number for this Group is (703) 308-5403.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 308-9051, (for formal communications intended for entry)


Or:

(703) 305-3900 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington. VA., Sixth Floor (Receptionist).



Jacques M. Saint-Surin
November 8, 1997


KRISTA ZELE
SUPERVISORY PATENT EXAMINER